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ABSTRACT

This study was conducted to determine the effects of instruction on using a formal media selection procedure on the media selection choices made by novice instructional designers. Twenty-nine male and female graduate students enrolled in a media design course at Arizona State University participated in the study. Media design problems were used which required students to develop an instructional presentation for various situations: Personnel Interviewing, Aircraft Instrument Comprehension, C.T. Scan, and Instructional Objectives. The participants were randomly assigned to groups which selected media under two conditions: an informal intuitive condition and a formal media selection condition using a model developed by Reiser and Gagne (1983). Each media selection problem had a designated "correct answer" identified by two experienced instructional designers. Results indicate that 32% of the students working in the intuitive condition and 55% of the students working with the model made the correct media selection; however, 56% of those who made correct decisions with the model did not work through it correctly. In the final, test condition, a total of 28 (96%) made the correct media selection with the model, although only 40% used the model correctly. It was tentatively concluded that use of the Reiser-Gagne media selection model can help students make more correct media selection decisions, and that the redundancy in the model and its restricted choices increase the probability of making a correct choice even if the model is not used correctly. A list of references and two data tables complete the paper. (JB)

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Selecting Media for Instruction

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Abstract

The effects of instruction in using a formal media selection procedure on the media selection choices made by novice instructional designers is examined. An informal intuitive selection procedure is compared with instruction (information, practice, and feedback) using a formal media selection procedure developed by Reiser and Gagne (1983). Results indicate that students who use the media selection model make more correct decisions than when they don't use the model. Also, students often do not use the model correctly, but the redundancy in the model and the restricted choices available increase the probability that a correct choice will be made.

Selecting Media for Instruction

Most formal media selection procedures are designed to assist developers in the selection of the appropriate medium to use in a given instructional situation. Higgins and Reiser (1985) reported that subjects who read a review of the characteristics of media selection models (Reiser and Gagne, 1982) and a description of how to use the Reiser and Gagne (1983) model for media selection were more likely to make media choices which matched those of experienced instructional designers. However, because of the relatively low percentage of students who made correct media selections, the investigators questioned the adequacy of the orientation the students received to the media selection model. The current study presents students with additional information, practice and feedback in using the model.

Method

Subjects

Twenty-nine male and female graduate students enrolled in a media design course at Arizona Sate University during the fall semester, 1985, participated in the study.

Materials

Four of the media design problems developed by Higgins and Reiser (1985) were used in this study. The problems were written descriptions of various instructional situations in which an instructional presentation had to be developed. Each problem involved a different content area, a different type of learning outcome, and a different instructional setting. The problems were entitled Personnel Interviewing, Aircraft Instrument Comprehension, C.T. Scan, and Instructional Objectives, each title reflecting the subject matter of the instructional program to be designed.

Each problem included information about the purpose of the instruction and specific instructional objectives. The problems also included descriptions of the instructional setting, the intended audience, the media budget available, and the instructional functions of the media to be selected.

Each media selection problem had a designated "correct" medium for use in that situation. These correct media choices were identified by two experienced instructional designers using the Reiser and Gagne media selection model.

Procedures

The participants selected media under two conditions: an informal intuitive condition and a formal media selection condition. The C.T. Scan, Personnel Interviewing, and Aircraft Instrument Comprehension problems were randomly assigned to the students under the intuitive condition. Students were directed to read the problem, select the most appropriate media or medium, and write a brief rationale for their selection. No feedback was given on the appropriateness of their media selection.

Following the intuitive condition, students were instructed to read the review by Reiser and Gagne (1982) and the material by Reiser and Gagne (1983) describing how to use the Reiser and Gagne media selection model. Students were directed to read the articles during the next week and use the formal model to make a media selection for the Instructional Objectives problem. They were asked to record the step-by-step decisions they made while working through the model, and to record the amount of time required to study the readings and use the model, and again were asked to write a brief rationale for their decision.

At the end of the week, the correct answer as well as the rationale behind its selection was discussed in class. Questions regarding the use of the model were answered. At the end of class, students were assigned to the C.T. Scan, Personnel Interviewing, or Aircraft Instrument Comprehension problem, such that each student was systematically assigned a different problem than in the intuitive condition. They were instructed to work through the problem as in the practice, and they were informed that this was one of six graded assignments that would be used to determine their course grade.

Results

In the intuitive condition, 36% of those students with the C.T. Scan problem and 55% of those with the Personnel Interviewing problem made the correct media selection. None of the students assigned the Aircraft Instrument Comprehension problem made the correct media selection. A total of 32% of the students made the correct media selection decision. These data are summarized in Table 1.

After reading the materials and working through the media selection model with the Instructional Objectives problem, 55% of the students made correct media selections. However, 56% of those who made correct selections did not work through the model properly. Seventeen percent of the students used the model properly but made an error in final media selection. Fourteen percent of the students neither used the model properly nor made the correct final media selection decision. These data are summarized as Table 2.

In the final, test condition, students again used the model to select media for one of the instructional problems, but this time they were told that their performance would count as part of their grade. Of the 29 students, a total of 28 (96%) made the

correct media selection, but only 40% of those who made correct media selections also used the model correctly. This information is presented in Table 3.

Discussion

Performance in the intuitive condition indicates that selecting media for given problems is fairly difficult, since only 32% of the students made the correct media selection. It can also be inferred from the differential performance on the media selection problems in the intuitive condition that the problems vary in difficulty. None of the nine students who were assigned the Aircraft Instrument Comprehension problem were able to make the correct media selection intuitively, although 36% of those attempting the C.T. Scan problem and 55% of those attempting the Personnel Interviewing problem were able to make correct selections

After practice and self-instruction in use of the Reiser-Gagne media selection model, students are able to make correct choices more often. This may be partially due to the redundancy built into the model, since the same media choices appear in several of the final choice boxes in the flowchart. Performance in the practice condition also indicates that students are unable to use the model effectively based upon reading alone.

Performance in both the practice and test conditions indicates that the model is fairly difficult to use. Only 24% of the students in the practice condition and 40% in the test condition were able to use the model correctly to make the correct media selection. However, in the test condition 96% of the students made the correct media selection, This again indicates that the redundancy within the model helps to restrict media selections, even though it is used incorrectly. It can also be seen that students get better at using the model correctly as they gain experience.

It can tentatively be concluded from this study that students who use the Reiser-Gagne media selection model make more correct media selection decisions than when they don't use the model. Also, students often do not use the model correctly, but the redundancy in the model and the restricted choices available increase the probability that a correct choice will be made.

References

Higgins, N. & Reiser, R. (1985). Media selection: An exploratory study. Journal of Instructional Design, 8(2), in press.

Reiser, R., & Gagne, R. (1982). Characteristics of media selection models. Review of Educational Research, 52(4), 499-512.

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Table 1

Intuitive Media Selection Procedure: Proportion of Students Making Correct Media Selections

	Media Selection Problem Assigned		
	C.T. Scan	Personnel Interviewing	Aircraft Instrument Comprehension
Correct Media Selected	4 (36%)	6 (55%)	0 (0%)
Incorrect Media	7 (63%)	5 (45%)	9 (100%)
Totals	11	11	9

Table 2

Reiser-Gagne Model Use: Practice (Instructional Objectives Workshop Problem) - Proportion of Students Using Flowchart Properly and Making Correct Media Selections

Correct Model Use/ Correct Media Selection	7 (24%)
Incorrect Model Use/ Correct Media Selection	9 (31%)
Total Correct Media Selection	16 (55%)
Correct Model Use/ Incorrect Media Selection	5 (17%)
Incorrect Model Use/ Incorrect Media Selection	4 (14%)
Unable to complete assignment	4 (14%)
Total	29